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THE BUSINESS CYCLE IN THE REPRESENTATION OF ROBERT E. LUCAS, JR.

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Abstract
In various forms, economists are still taking sustained action to find specific answers to questions related to the issue of economic fluctuations. In this context of continuing concerns, both the "old" classics and the "new" classics have made substantial progress in their own theories of the business cycle. If, in order to explain the economic fluctuations, the old classics based their theory on non-governmental intervention as well as on the flexibility of prices, wages and interests, the new classics transpose the same problem through a reference, mainly, to technological disturbances, information asymmetry, as well as to real business cycles. In general terms, it can be argued that the new classics continue to believe that the business cycle can be understood in an equilibrium-oriented market model, thus maintaining the classical equilibrium model.

This study represents a foray into the history of classical economic thinking, providing a current perspective on the main research directions of the new classical school in the field of business cycles in relation to the contributions made by economist Robert E. Lucas Jr.

Key words: *economic cycle; classical economics, neoclassical economics; economic fluctuations; monetary neutrality.*

JEL Classification: *B12, B13, B31.*

I. INTRODUCTION

In the history of mankind, economic thought has registered successive stages in its evolution, being delimited temporally by a series of controversies. After a period of supremacy of ancient and medieval conceptions, we are witnessing the emergence of modern economic theories: classical, neoclassical, Keynesian, neo-Keynesian - to name the most important. Turning our attention to the course of classical economic thought, starting from the initial postulates and later going through the perspective of the new classics, developed under the influence of the Keynesian thinking, economic classicism has progressively acquired new characteristics. In essence, despite having acquired a number of distinctive elements, classicism continues to remain a landmark in economic theory, invariably capturing and explaining economic phenomena better than any other current of economic thought can. Among the main features of classicism is undoubtedly the exclusion of state intervention in the economy, based on self-regulation of markets, due to the flexibility of prices, wages and interest rates. The classic current of economic thinking was followed by the neoclassical one that innovated economic science by approaching a new vision of the value of goods, introducing the concept of marginal utility, an element with a strong impact on the consumption or production decision. Instead, Keynesianism promoted as a life-saving solution for overcoming the critical period of the 1930s economy, government intervention for full employment, and stimulating demand for goods and products through deficit financing of public spending. In response to the inflationary and unsustainable effects produced by the implementation of Keynesian policies, the classics perfected their existing theory and were able to provide the necessary answers to economic theory.

Despite the evolution of economic thinking, a large number of economists believe that the central problems of the economy remain unresolved. These include the issue of the real business cycle. In this paper we will analyze and present briefly the stages of classical economic thinking, from its basic version to the new approaches developed both under the influence of the Keynesian current and the real economy, emphasizing the theory of the cycle and the contribution of Robert E. Lucas Jr.

II. PURE CLASSICISM: THE THEORETICAL BASIS OF THE NEW CLASSICS

The beginnings of "economic classicism are marked by Adam Smith's conceptions" (Caraman, 2015, p. 310) that reorient the economy from satisfying its own interest to satisfying the interest of the entire nation. The hypothesis on which Smith's theory was based centered on the idea that price, wage, and interest rate flexibility created the conditions for balancing markets and full employment. The theory, being based on the characteristic of the market to self-regulate, thus giving it reasons for economic stability, would limit state intervention to

ensure the free functioning of markets and a balanced budget. We are thus witnessing the progressive development of a system of thought "in a context dominated by perfect competition, without protectionist restrictions and in the absence of any form of monopole or unfair competition" (Caraman, 2015, p. 310).

For the classics, the economy manages to continuously reach the natural level of GDP, using its mechanisms to quickly correct and rebalance any deviations from equilibrium. The key element of classicism, full employment, is considered to be the result of any free economy. Even in the event of an imbalance, at a certain level of unemployment, the labor market becomes able to rebalance using wage flexibility, naturally resulting in an increase in labor demand. At the same time, in case of an imbalance between the level of saving and the level of investments, the balance is achieved automatically. If there is a decrease in investment in the market calculated as a share of total disposable income, the demand for money will automatically decrease, which in turn will lead to a decrease in the interest rate so that it will become attractive to money holders, thus restoring market balance. In addition to this theory, which became the core of classical economic theory, two other theories enriched classical economic analysis: the law of markets enunciated by Jean-Baptiste Say and the quantitative theory of money enunciated by Irving Fisher. In short, the Say Law indicates that in the economy the demand for goods and services is equal to the supply of goods and services and that any economy tends to generate the revenue needed to create a demand high enough to match the supply. Even if part of the revenue will be used for purposes other than the purchase of goods and services thus generating a decrease in demand for goods and services in relation to supply, followed by adjustment of supply and therefore underemployment , the economy will subsequently be "directed either to consumption or to investments, which, being components of the gross domestic product, would help the market in regaining its equilibrium" (Caraman, 2015, p. 310). Regarding money, according to classical economists, they do not exert influence on the real economy, being neutral. Thus, the real factors of the economy, such as the "level of production, employment and consumption, are not connected with the nominal ones, such as the level of price, wage or exchange rate, giving rise to the well-known classical dichotomy" (Caraman, 2015, p. 310). The assumptions on which the new classical theory is based are the full flexibility of all prices and wages in all markets, non-government intervention and the Walrasian equilibrium.

A first hypothesis adopted by the new classics is that all economic agents are rational and maximize the results of decisions made with full access to information, which will allow them to make predictions as accurate as possible, giving rise to the concept of rational expectations. At the very least, there should be no systematic errors in their decisions. This is true not only for entrepreneurs, but also for workers. However, Keynesians have always maintained the idea that because of their position, entrepreneurs are advantaged in making decisions about investment, production and employment, having a better image because of access to information, but also because "they can make accurate predictions. about, say, future prices" (Birol, 2015, p. 574). However, in the Keynesian view, this is not the case for workers who have made systematic mistakes, especially by underestimating future inflation. According to the new classics, when making decisions, economic agents not only try to anticipate the evolution of risk elements with the highest degree of accuracy, using access to complete information, but they also try to anticipate as accurately as possible what government policies will be pursued in the future, the economic circumstances and, therefore, the effects of government policies in their forecasts and estimates. Therefore, the new classics are skeptical about the political recommendations of the Keynesians and if we analyze these hypotheses further, we find that "the new classics consider that all economic agents could have access to past time series (Birol, 2015, p. 577) to make predictions in -such a way as to prepare properly for the future events. These aspects assume that history repeats itself, but also that they are valid for all economic agents. Under these conditions, according to the new classics, entrepreneurs can create an image of the risks. However, these principles are not found in Keynesian politics because, according to Keynes's theory, we cannot predict the future data of the past because there is always an element of uncertainty, so investing is, in Keynes's words, a psychological issue that can be explained by the "animal spirits". Of course, as the new classics would point out, not all entrepreneurs would be able to make accurate predictions and estimates of future risks, but those who will not be able will eventually be eliminated from the market. This is good for the economy, as these entrepreneurs use existing capital in an unproductive and inefficient way.

The second hypothesis taken over by the new classics is represented by the existence of perfect competition in all goods, services and labor markets, but also by the full flexibility of nominal prices and wages, as captured by the Walrasian balance. In this respect, the Walrasian equilibrium system presupposes a perfect equilibrium in all markets, including labor, which can be summed up in the fact that there can be no excess supply or demand for any commodity. The same happens on the labor market, which means that, for this, the balance would be automatically at a certain income level, leading to the emergence of the concept of the natural unemployment rate. In such a case of perfect equilibrium in all markets there is no possibility of a case of underemployment in the labor market due to actual demand, so the Keynesian conclusion can be characterized as inconsistent because it does not take into account the traditional microeconomic premises which converged on the idea of perfect competition.

III. THE REAL ECONOMIC CYCLE IN ROBERT E. LUCAS, JR.

The 1970s provided a striking confirmation of the fundamental point of view of the classics regarding the Keynesian theory-inspired policies: they generate inflation, they are unable to resolve the natural gaps in the free market, and they distort market signals. Also, from the mid-1970s, a new term began to appear in economic policy discussions: the supply economy. This perspective was embraced by Ronald Reagan and formed the basis for the 1981 tax cut and many of his other policies. The starting point of the "revival" of classical economic theory, based on supply, was the recession of 1974-1975 which was a period of crisis for Keynesians, where inflation and unemployment were at alarming levels. The period following the oil shock dismantled the validity of the Phillips curve, an instrument used by Keynesians. This sounded the alarm that Keynesian theory-inspired macroeconomics was not working. Reducing unemployment by increasing the deficit is no longer a viable solution. Thus, the emergence of the new classical macroeconomics and the concept of "rational anticipation" were Friedman and Phelps' theories on the inflation-unemployment compromise. The two argued that, given that individuals are concerned with the real variables, not the nominal ones, supporting a certain level of inflation cannot have a lasting effect on balancing markets, especially the labor market as they previously argued the Keynesians. In this context, the concept of "rational anticipation" appears, at which point, individuals anticipating a certain level of inflation will act accordingly, making decisions on prices and occupancy levels.

Through this theory, Friedman made it clear that the agents' economic forecasts are sensitive to permanent changes in the inflation rate. However, the adjustments made are gradual, which means that in the short term the market may face certain imbalances (e.g. despite the fact that the economy is stimulated by an expansionary monetary policy on the labor market, the presence of unemployment can be seen even and at a low level). In the end, however, monetary expansion will have the effect of raising prices, and unemployment will return to the level dictated by real variables in the economy. The moment of the year 1976, when Milton Friedman received the Nobel Prize in Economics largely for his work dismantling some of the core principles of Keynesian economics, actually marked the rejection of the postulates of the Keynesian economics by the economic profession. At the same time, Friedman also rejected the conclusions generated by the Philips curve. Paul Craig Roberts (1978) was one of the first policy advocates to shed light on the supply of the economy and recognized that the collapse of the Keynesian system created an opportunity to promote fiscal policy by arguing that certain types of tax cuts have not led to an increase in the deficit as much as direct spending programs. By far the most valuable contributions to supply-side economic policy, after Smith and Say, were those made by Robert Mundell, Arthur Laffer, Robert E. Lucas, Thomas Sargent, Robert M. Townsend, and Robert J. Barro. They, like all economists in the 1970s, were deeply concerned about the problem of "stagflation." Laffer and Mundell, however, saw the origin of stagflation in the definitive abandonment of the gold standard in 1971. In their view, once the gold-dollar link was broken, there was no effective limit to the government's ability to resort to money issuance or as many times as he wants. The inflation phenomenon "forced" the tax system to increase tax rates accompanied by wage increases that induced a false impression on the labor market of earned income, which, in turn, did not translate into an increase in purchasing power. For investors, this was a time of discovery that much of their capital gains were just inflation, but they were taxed as if they were real. Therefore, under these conditions, a strategy was needed to end stagflation. It was necessary to reduce monetary growth and restore the gold standard. Then, tax rates had to be reduced in order to restore the primacy of production to the detriment of consumption. The expansion of the money supply does nothing but artificially stimulate the demand for money but does not lead to a real expansion of it. Instead, an increase in real output increases the demand for real money and therefore helps absorb real monetary expansion in the inflation-free economy. The tax cut increases employment and promotes economic growth, implicitly translating into an increase in demand for money that will allow the Federal Reserve to provide additional savings to banks without generating questionable interest rates associated with money loss conditions. In fact, the monetary issue is an inflationary one, while the reduction of taxes is an expansive one at the moment of the appearance of a high unemployment. (Mundell, 1971).

An important step in the new classical theory is "the introduction by Lucas (1973) of the concept of rational expectations that comes and replaces the concept of previous adaptive expectations" (Caraman, 2015, p. 311). Based on such rational expectations and the generalized equilibrium of the markets, "Lucas initiated in 1973 the theory of the real business cycle including both the idea of compromise between inflation and the level of real GDP - while maintaining, in the short term, non-neutrality of money as well as the idea of the effects of monetary policies that influence the supply of goods and services if their effect is incorrectly predicted by economic agents due to incomplete information held" (Caraman, 2015, p. 311). He developed and analyzed a model by which monetary instability generates fluctuations in output and inflation. In this model, individuals with incomplete market information identify this monetary instability as a change in relative prices, which in turn generates fluctuations in aggregate output. In other words, in the situation of an unforeseen level of inflation, economic actors conclude that the relative prices of the goods they produce are slightly higher, which causes them to increase the quantity offered.

In the case of Lucas's (1996) analysis, money is of special interest. Given that in the economy the goods are exchanged for money and later the money is exchanged for goods, the producers have the mission to anticipate as accurately as possible the quantity of goods demanded by the market. In other words, they must have the ability to anticipate the value of money on the market. Relevant in this case is the model introduced by Samuelson (1958) in which two generations of individuals are identified: the young (who produce) and the old (holders of money; these are also those who buy). In this case, the anticipation of the value of money depends on the decisions of the next generation and, therefore, on the anticipations that the next generation will make. This means that rational decisions by the present generation also involve anticipating the expectations of other individuals. In this economic model, the notion of equilibrium presupposes that the forecasts on future prices must coincide with the actual prices, found in the market, these being also those that produce effects on the forecasts of the future. In other words, equilibrium implies a certain price and a certain amount of goods offered on the market in such a way that the amount of money offered (by buyers) coincides with the amount of money demanded (by producers). However, increasing the amount of money coordinated by the monetary authority, at a constant rate of growth, simply offering money on the market regardless of the amount of money already on the market, will generate inflation and steady rise in prices. At the same time, Lucas (1996) contributes to the creation of a model in which an expansion of the amount of money initially generates an intensification of economic activity - as suggested by empirical evidence - and for that purpose, the mechanism presented above does not work in the desired direction. However, there are also ways to inject money into the economy and which, although they produce inflation, do not produce effects on real variables. In other words, if in an economy, unlike the previous example where money was simply "thrown" on the market, it would be distributed proportionally to economic actors, depending on the amount of money already held, the effect of this monetary injection would be beneficial. because this type of monetary injection has no effect on purchasing power.

Dobrescu & Paicu (2012) discuss the model of the two islands, which was formulated by Lucas (1996). Taking from the example of Samuelson (1958) who assumed the existence of only two types of people in the economy: old (those who buy) and young (those who produce), Lucas divided them into two islands where the number of old people distributed on the islands is proportional, while young people were randomly divided, their number being unequal. The starting point in this example is to consider that transfers are proportional and the amount of money is constant. At first sight, the first logical conclusion can be drawn: where producers are few, production is below average, the price of goods produced will be high, the market signal being that production must be increased. Conversely, on the island where there are many producers, the production is above the average value, the goods produced are abundant and, implicitly, the low price, which will determine them to produce less. Thus, the production on the two islands is dependent on the distribution of young people - producers.

The fluctuations that occur as a result of the distribution of producers are independent of the business cycle because, "one of the essential features of cyclicality is that all sectors of the economy evolve together" (Dobrescu & Paicu, 2012, p. 132). If a monetary injection into the economy is added to the data of the previously discussed issue, an increase in prices will be observed. And for the producer, this price increase can have two explanations: (1) prices may be high due to monetary disturbances, in which case the optimal decision is to keep production constant, or (2) prices may be high due to the small number of producers, in which case the optimal decision is to increase production. Here is the novelty introduced by Lucas. The optimal response to the two situations can be achieved only with the full access to information for the producers and buyers, because if the size and cause of monetary fluctuations are known by economic actors, these monetary fluctuations will be neutral. Hence, the information mechanism proposed by Lucas shows how anticipated fluctuations in money supply growth have very different effects from unanticipated fluctuations: anticipated economic fluctuations are neutral while unanticipated ones produce inflation because they affect real variables. Like Friedman, Lucas concludes that the most important rule for mitigating the negative effects of monetary policy is to set a stable annual growth rate for the money supply, this rule being complemented and supplemented by other recommendations on public sector taxation and spending.

However, for the new classics, the best economic policy is exactly its absence. Given Lucas' vision, his economic model also included the impact of technological change on the evolution of economic activity and the unemployment rate, thus minimizing the influence of changes in the market for goods and services or the money market. According to the proponents of this theory, productivity is procyclical, being inextricably linked to technological fluctuations. The labor supply is stimulated only during the productive periods, in critical economic conditions that generate decreases of the real wage, being reduced (Mankiw, 1990). In the case of an inadequate technological level, we are witnessing the decrease of production, consumption and implicitly of investments, the balancing of the technological level not having the power to restore the GDP level to the equilibrium value, because the capital accumulation has already become a propagation mechanism. apparently without major negative effects on the supply of goods and services, in shocks dangerous to the economy. "The dynamics of employment balance, output and the real interest rate is independent of monetary policy" (Caraman, 2015, p. 311), with real variables reacting only in response to technological change.

IV. CONCLUSIONS

The re-adoption and implementation of the principles of classical economic theory after a period of supremacy of Keynesian principles is a confirmation that the classical economists are the ones who have best understood how economics works. Despite the transformations that classical economic theory has undergone but also despite the new characteristics acquired, the essence has remained the same: free markets function optimally outside government intervention. Although the theory of the "old classics" that explains economic fluctuations is more simply substantiated than that of the "new classics" on non-governmental intervention and price flexibility (whether we are talking about labor or commodity or money), the novelty introduced by the new classics referring to the technological characteristics, the informational asymmetry but also a more pronounced emphasis on the monetary characteristics of the economy, the common point is represented by the fact that in both theories the premise is the same: the business cycle can be explained by reference to the equilibrium market model.

Another distinction between the two currents can be noticed when we notice that the ideas of pure classicism, based on non-state intervention and therefore on market self-adjustment, due to the absence of price rigidity, wages and interest rates are taken over by the new classics with a new vision, distinguishing themselves from the "old" classics by replacing the concept of "adaptive anticipations" with that of "rational anticipations".

Undoubtedly, we can conclude that this theory of real cycles enunciated by Lucas, generated a new perspective and new techniques of macroeconomic modeling. Despite Lucas' significant contribution, the theoretical economic approach is far from over because, as he himself argued, economic progress will result from the continuous effort to formulate explicit theories that fit the facts of economics.

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